

REMARKS/ARGUMENTS

Claims 1 to 15 are pending. Claims 16 to 29 are drawn to a non-elected invention and are cancelled and will be filed in a divisional application.

Claims 1 and 9 have been amended to clarify that the drapable diamond has the ability to form various shapes and to become dry when the non-etching solution is removed. As noted in the specification at page 6, paragraphs 0037 and 0038, the term drapable means to "hang limply". The diamond thin film can be stored and rewetted to become drapable again. Such a result is clearly unexpected without any precedent in the prior art. The economic importance of this invention is very significant for this reason.

Claims 1 to 15 were rejected under 35 USC 103(a) as being unpatentable over Vaitkus et al (U.S. Patent No. 5,622,586). This rejection is factually incorrect as to the analysis of the teachings of the reference. This reference does not describe a drapable diamond.

The substrate is always present (such as wax or silicon) to support the diamond film in this reference.

Thus, Vaitkus et al require adhesively bonding a second base to the diamond film. The Applicants' claimed method does not require this step to support the drapable thin film diamond, and is thus substantially different.

Regarding Vaitkus' et al use of the word "floating", column 2, lines 5-7, their context is "thermally floating". This does not refer to physically floating the drapable diamond on the liquid, as in the present invention. It merely refers to the fact that the diamond film in Vaitkus et al is thermally insulated (column 3, lines 7-10) by means of a Teflon board (column 4, lines 64-67; column 7, lines 32-37). Thus this teaching of "floating" has nothing to do with the claimed invention.

Aside from the distinction between thermally floating as in Vaitkus et al and floating as in the present application, the teaching and claims of the present invention involve not only floating drapable films on a solution, but removal and storage of undamaged films for later use which is not taught by this reference.

With regard to detecting flow rates of fluids, the teaching of Vaitkus et al is in regard to measuring the temperature of the fluid by means of a diamond film affixed to a Teflon board or substrate, or like material. In the present application, the fluid is used as part of the preparation and fabrication process.

All teaching of Vaitkus et al is related to flat substrates. The use of curved substrates and drapable films is not described. At best this rejection is an attempted hindsight reconstruction of Applicants' claimed invention from Vaitkus et al, which is not permitted. Reconsideration of this rejection is requested.

Claims 1 to 15 were also rejected under 35 USC 103(a) as being unpatentable over Ikegaya et al (U.S. Patent No. 5,587,013). This rejection is also factually incorrect in relation to the teachings of the reference. The reference does not describe a drapable film of diamond (DTF).

All claims and teachings of Ikegaya et al involve free-standing diamond that maintains its final fixed shape as flat, convex, or concave. Applicants'

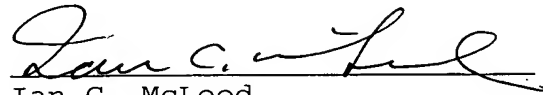
specification and claims address drapable films of diamond that are drapable onto various substrates with different shapes when removed from the non-etching solution. This is not taught by Ikegaya et al.

Freestanding films of 30 micrometers as in Ikegaya et al are too stiff to be drapable and will break even with slight additional flexure. The "bending" (column 1, line 31 and later) referred to by Ikegaya et al is due to built-in tensile stress and stress due to thermal mismatch between the substrate and diamond. Again the rejection is an attempted hindsight reconstruction of Applicants' invention from Ikegaya et al, which is not permitted. Reconsideration of this rejection is requested.

In summary, both references teach away from the present invention. The assumption is that diamond films are rigid and must be processed in a way to prevent bending and breakage. In Applicants' invention the diamond thin film is drapable. There is no way that one skilled in the art could derive the presently claimed invention from these references.

It is now believed that Claims 1 to 15 are in condition for allowance. Notice of allowance is requested.

Respectfully,



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